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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,173	09/26/2006	Zhisheng Deng	MAT-8912US	7233
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EXAMINER				
BLOUIN, MARK S				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/594,173

**Applicant(s)**

DENG ET AL.

**Examiner**

MARK BLOUIN

**Art Unit**

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)  
Paper No(s)/Mail Date 9/26/08
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

### **Detailed Action**

#### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Kang (US 7,099,114).
3. Regarding Claim 1, Kang shows (Fig. 8b) a head slider which has a head part and which performs at least one of recording and reproducing by the head part in a state in which the head slider floats over a recording medium, which comprising: a first air bearing part (250) which is disposed on an air inflow end side on a base surface; a second air bearing part (160) which is disposed closer to an air outflow end side than the first air bearing part on the base surface and which has the head part and has an area smaller than that of the first air bearing part; a pair of positive pressure generating parts (252) which is disposed on both sides of a center axis of the head slider in the longitudinal direction closer to the air outflow end side than a step part formed between the first air bearing part and the base surface on the air inflow end side; a side rail parts (the rail part between 251 and 252) which are disposed between the first air bearing part and one positive pressure generating part of the pair of positive pressure generating parts, and between the first air bearing part and the other positive pressure generating part of the pair of positive

pressure generating parts; and an outside side rail parts (outside hook portion of part 252) which are disposed outside the pair of positive pressure generating parts with respect to the center axis of the head slider in the longitudinal direction.

4. Regarding Claim 2, Kang shows (Fig. 8b) the head slider, further comprising:  
a first step part (120) which is disposed between the base surface (112) and the first air bearing part (250); and a second step part (130) which is disposed between the base surface and the second air bearing part.
5. Regarding Claim 3, Kang shows (Fig. 8b) the head slider, wherein a negative pressure generating part (140) is provided in an area surrounded by the first air bearing part, the second air bearing part, and the side rail parts.
6. Regarding Claim 4, Kang shows (Fig. 8b) the head slider, where in the first air bearing part (250), the second air bearing part (130), the side rail parts, the outside side rail parts (the rail part between 251 and 252) and the pair of positive pressure generating parts (252) are formed at the same height from the base surface.
7. Regarding Claim 5, Kang shows (Fig. 8b) the head slider, wherein the first step part (120) and the second step part (130) are formed at the same height from the base surface.
8. Regarding Claim 8, Kang shows (Fig. 8b) a head support unit comprising: the head slider; and a suspension which applies a predetermined thrusting force with respect to the head slider from a side opposite to a side on which the first air bearing part and the second air bearing part are disposed on the base surface.

9. Regarding Claim 9, Kang shows (Fig. 1) the head support unit, wherein the suspension (34) has a pivot part which applies the predetermined thrusting force with respect to the head slider (32).
10. Regarding Claim 10, Kang shows (Fig. 1) a disk drive apparatus comprising: the head support unit (30); a disk-shaped recording medium (10); a drive part (20) which rotates and drives the disk-shaped recording medium; a rotating part (36) which rotates the suspension of the head support unit in a radial direction of the disk-shaped recording medium; and a control part (actuator) which controls the rotation and drive of the drive part and the rotation of the rotating part.
11. Regarding Claim 11, Kang shows (Fig. 8b) the disk drive apparatus, wherein the suspension of the head support unit has a pivot part (36) which applies a predetermined thrusting force with respect to the head slider (32); wherein when a position at which the pivot part is abutted against the head slider is set to a pivot position, the position of the center of gravity and the pivot position of the head slider projected onto the disk-shaped recording medium are matched with each other.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 6 and 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kang (US 7,099,114).

14. Regarding Claims 6 and 7, Kand shows (Fig. 8b) all the features described, *supra*, but does not show, wherein distance D2 in the longitudinal direction from the air inflow end of the head slider to the step part of the first air bearing part satisfies a relationship below where a length of the head slider in the longitudinal direction is DT:  $0.47 \leq (D1/DT) \leq 0.66$  or  $0.18 \leq (D2/DT) \leq 0.35$

Kang does not set forth the dimensions in these claims. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the slider of Kang with the claimed dimensions through routine experimentation and optimization in the absence of criticality. More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Swain et al.*, 33 CCPA (Patents) 1250, 156 F.2d 239 70 USPQ 412; *Minnesota Mining and Mfg. Co. v Coe*, 69 App. D.C. 217, 99 F. 2d 986, 38 USPQ 213; *Allen et al. v Coe*, 77 App. D.C. 324, 135 F. 2d 11, 57 USPQ 136.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Blouin whose telephone number is 571-272-7583. The examiner can normally be reached on M-F from 6:00 to 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joe Feild, can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Mark Blouin/

Primary Examiner of Art Unit 2627

Mark Blouin  
Patent Examiner  
Art Unit 2627  
October 3, 2008